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this term has not been changed.

Claim 1 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. The term "whose principle constituent is a crystallizable thermoplastic" preceding the transition phrase renders the claim indefinite. Moreover, the term "principal" is not defined in the claim and, as such does not provide a standard for ascertaining the requisite degree.

Claim 1 has been amended to include the composition of the film after the transitional clause. Moreover, the term "principal" has been replaced by "main". It is evident from the specification as a whole that the film is predominantly made from a crystallizable thermoplastic polymer, i.e. the main constituent is a crystallizable thermoplastic. "Principal" or "main" clearly indicates that of all the constituents of the film the crystallizable thermoplastic is allocated the largest share.

The term "at least barium sulfate" in claim 1 was held to be unclear.

Applicant has deleted the term "at least".

Additionally, the terms "as pigment" and "as light stabilizer" have been deleted from claim 1 as this use indication does not limit the claim.

Claim 12 has been amended to remove the process limitation "measured" and instead indicated that the corresponding parameter has been measured "according" to the specified norm. Nevertheless, Applicant disagrees with the Examiner that this is a process limitation in a product claim, as it only indicates how a certain claimed property of the film is determined. Without indication of the method these parameters would be meaningless. The measurement of a certain property has nothing to do with the manufacture of the film but only with the way how to determine this film property.

In claims 13 and 14 the term "embodiment" has been deleted and replaced by "film".

In claim 15 the term "too" has been deleted. In order to improve the clarity of this claim the term "have been provided with" has also been deleted.

In claim 16 the process limitation "has been provided" has been deleted.

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Rejections under 35 U.S.C. § 103

Claims 1-7 and 13-15 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim et al. (US 5,660,931) in view of Srinivasan (US 6,309,987). It is the Examiner's position that Kim shows a white film comprising polyethylene terephthalate, barium sulfate, and bisbenzoxazole. The film according to Kim has a thickness of 12µm, shows rutile type titanium dioxide with an average particle diameter of 0.1 to 3 µm and an average degree of whiteness of greater than 85%.

It is admitted that Kim does not disclose the limitations of present claims 3, 6, 7, and 9. It is further admitted, that Kim does not disclose that the film is opaque, comprises a UV stabilizer or a flame retardant; and although this is not expressly stated it seems that the Examiner also admits that Kim does not disclose that the film contains an optical brightener.

Before explaining in detail why the presently claimed film is unobvious over Kim and also over any of the other cited secondary references it seems to be worthwhile to take a closer look at the problems underlying the present invention and the technical means for their solution.

It was an object of the present invention to provide an opaque, white low-flammability film which, besides having good orientability, good mechanical properties and good optical properties and a low Yellowness Index, above all has high UV resistance and offers a high level of protection from light and, in particular, does not embrittle when exposed to high temperatures (see specification at page 3, ln 10 ff). This means the desired film has to simultaneously meet nine (9!) requirements:

- opaqueness
- whiteness
- low-flammability
- good orientability
- good mechanical properties
- good optical properties
- low Yellowness Index
- high UV resistance
- does not embrittle at high temperatures.

It may well be that the prior art shows films which meet some of the above requirements

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(e.g. like the film according to Kim). Yet, a combination of all of the above requirements could not be achieved until the present invention was available. Many of the above requirements exclude each other. For example a film which shows good orientability and mechanical properties could not at the same time meet the low flammability requirement because as soon as a common flame retardant was added to the polymer for film manufacture, the polymer could not even be extruded because of complete decomposition of the flame retardant/polymer (see specification at page 4, lns. 19-26). Or if common UV-stabilizers are incorporated into the film in order to achieve UV stability the film would tend to become yellow. The specification gives more examples, and specifically at page 9, ln. 27 to page 11, ln. 26 numerous unexpected results are illustrated.

Kim now discloses a film which is low-weighted with paper like characteristics, improved anti-static properties and printability (see Kim at col. 1, lns. 57-60). At best it can be said that the film according to Kim comprises barium sulfate pigments, an optical brightener (the fluorescent organic whitening agent) and a UV-stabilizer (the rutil type TiO_2). The thermal stabilizer used in Kim does not provide for low-flammability property. Heat stability according to Kim only means withstanding 190 °C for 10 minutes, whereas low-flammability according to the present invention means assignment to construction materials class B2 and B1 and passing the "vertical burning test" (see specification at p. 3, lns. 16-24). Flame retardants in general are not mentioned in Kim. For this reason alone Kim is unable to render obvious the subject matter of the currently claimed invention. In light of the problems that skilled artisans had in the past with the incorporation of flame retardants into thermoplastic polymers (see specification at page 4, lns. 19-26 "... hitherto cake and have to be removed by methods used in mining.") there was definitely no motivation to incorporate these compounds into a polymer and to make a film.

Srinivasan used to slow retardants.

This deficiency in Kim cannot be cured by secondary reference Srinivasan. Srinivasan discloses nonwoven fabrics with UV stability and flame retardancy. Srinivasan has nothing to do with film making, let alone with opaque, white films with good optical properties. Why would one skilled in the art looking for an improvement in films look at a reference which deals with nonwovens, meltblown or spunbonded fibers? Srinivasan does not provide such a motivation.

*Yes Kim
SE Kim at this
nonwoven are
all directed
towards
pleating
out door
products
+
S → nonwoven
unpublished*

Likewise references Tono et al. (US 6,410,122), von Meer (US 4,384,040) and Yamazaki (US 6,106,924) cannot cure the deficiency in primary reference Kim even taken in

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combination with Srinivasan. At best Tono et al, von Meer and Yamazaki disclose individual subelements mentioned in dependant claims of the present application. To arrive at the subject matter of these dependant claims first the subject matter of dominating claim 1 has to be rendered obvious. As explained above references Kim and Srinivasan do not provide for that.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version With Markings To Show Changes Made".

A two month extension of time is being filed simultaneously with this amendment. Please charge the \$400.00 fee to Deposit Account 502193.

In view of the foregoing amendment and these remarks, this application is now believed to be in condition for allowance, and such favorable action is respectfully requested on behalf of Applicants.

Respectfully submitted,



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(See attached Limited Recognition Form)

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. An opaque white film with a thickness of from 10 to 500 μm ~~whose principal constituent is a crystallizable thermoplastic~~, wherein the film comprises a crystallizable thermoplastic as a main constituent, ~~at least~~ barium sulfate ~~as pigment~~, at least one UV stabilizer ~~as light stabilizer~~, at least one flame retardant and at least one optical brightener.
12. The opaque white film as claimed in claim 1, wherein the surface gloss of the film measured according to DIN 67530 (measurement angle 20°) is greater than or equal to 10, and the luminous transmittance (transparency) of the film, measured according to ASTM-D 1003 is less than or equal to 30%.
13. The opaque white film as claimed in claim 1, wherein the film has one or more layers, and ~~the embodiment wherein the film~~ wherein the film having more than one layer comprises at least one core layer and at least one outer layer.
14. The opaque white film as claimed in claim 13, wherein, in the embodiment film having more than one layer, the barium sulfate, the flame retardant and the optical brightener are present in the core layer, and the UV stabilizer is present in the outer layer(s).
15. The opaque white film as claimed in claim 14, wherein the outer layers, ~~too, have been provided with~~ comprise barium sulfate, flame retardant and optical brightener.
16. The opaque white film as claimed in claim 1, ~~wherein having~~ having a scratch-resistant coating, a copolyester or an adhesion promoter ~~has been provided on~~ is provided on at least one side of the film.